""Scientific and Religious Beliefs Revisited"."

Ghins, Michel

Abstract

Book review of Brian Davies' Why Beliefs Matter.

Document type : *Article de périodique (Journal article)*

Scientific and religious beliefs revisited

Brian Davies: Why beliefs matter. Reflections on the nature of science. Oxford: Oxford University Press, 2014, x+250 pp, £ 14.99 PB

Michel Ghins [1,*]

Email michel.ghins@uclouvain.be

[1] Institut Supérieur de Philosophie, Place Cardinal Mercier 14, 1348 Louvain-la-Neuve, Belgium

For those who share a sense of frustration at reading scientists writing about philosophy and religion, or, conversely, at listening to philosophers and religious people discussing science, Brian Davies' book starts well and offers high promise. The very first words of the Preface set the stage: "This book is about beliefs. It was born from my dissatisfaction with the attempts of many physicists to sell a vision of the world whose 'objective' character disregards what makes life interesting." (1) What makes life interesting are esthetic and ethical values. These are part and parcel of a worldview in which we may believe or not. The worldview advocated by the author is "pluralist": "we have limited mental capacities and will always need a multiplicity of ways at looking at the world in order to understand it as well as we are able. Even if the reductionist program never encounters a final road block, we will continue to need concepts such as purpose and meaning" (1).

It is true that we look at things in different ways according as we are looking at them as a scientist, a philosopher or a religious person. According to Bas van Fraassen (a philosopher), the scientific attitude is characterized by its objectivity as articulated at some length in his *The Empirical Stance* (2002: 155–176). Understanding science is a daunting task. It is then slightly surprising to read in the section entitled "A

Definition of Science": "Science can be described rather precisely. Indeed we can enlist the help of lawyers, because of a trial in the USA about whether creation science is indeed science" (189). This is followed by an excerpt of the ruling of Judge Jones in the "Intelligent Design" trial in 2004 in which science is described as a discipline in which testability by means of observable facts rather than recourse to religious authority is the acid test for the acceptance of a theory. This is, I believe, an important aspect of science, but perhaps not the only one. Davies correctly stresses that "One of the fundamental aspects of scientific thinking is that it does not depend upon the opinions or beliefs even of its greatest heroes" (189). From this and many other passages in the book, it is clear that the beliefs that matter are world-view beliefs and these do vary among scientists. Such beliefs, however, do not matter as far as the *contents* of scientific theories and their acceptance by the scientific community are concerned, at least in the long run. The beliefs that matter are the beliefs ~~which deal~~ which are important for guiding our lives, but eventually such beliefs do not have that much influence in the long-term evolution of science. Despite a large variety of creeds among them, scientists eventually come to accept a theory on the basis of its capacity to account for observations and experiment results. According to Davies, this is a historical fact.

In the first chapter, Davies begins his reflections on the nature of science by an overview of the scientific revolution in which he writes a few lines on some well-known major protagonists–Copernicus, Galileo, Descartes and Newton—and rightly stresses the impact of new technology, such as the inventions of the telescope, the microscope and accurate clocks. This chapter also contains brief criticisms of philosophers such as Popper and Feyerabend. The author mainly adopts an inductivist perspective which he claims to be in accordance with Newton's take on induction. Davies writes: "Almost nobody seems to have commented on Newton's claim in the General Scholium that the laws of motion *including their applicability to the heavenly bodies* had been obtained by induction from the phenomena. "(33) *Pace* Davies, many historians and philosophers of science (John Herivel, J. E. McGuire, Peter Machamer, etc.) have analyzed the role of induction both in Newton's writings and his actual scientific practice. In the General Scholium of the *Principia*, Newton states "In this [natural]

philosophy, particular propositions are inferred [deduced, as he says earlier] from phenomena and *afterwards* rendered general by induction." (Cohen and Westfall 1995: 118–119). Significantly, the all-important word "general" is missing in the author's quotation of Rule IV (35). Newton's "deduction" from phenomena has been widely discussed. As Herivel showed in 1965, Newton could not have deduced his laws of motion and certainly not the law of inertia, from phenomena, but found them instead by reflecting on some flaws in Descartes' laws. Newton deduced the inverse square law of gravitational force not from phenomena but from Kepler's laws *and* by relying on his dynamic laws; then, by induction, Newton made the law universal. Further in the book, Davies claims that according to Newton, God "did not need to act on them [planets]" (186). This is mistaken as the controversy between Clarke (Newton's spokesman) and Leibniz shows.

In the second chapter, entitled "The Human Condition", Davies makes a case in favor of "pluralism" which "does not imply anything about how the world is in itself. Rather it is the claim that we, as human beings, need multiple, context-dependent viewpoints in order to understand the world as best as we can" (44). The author defends an "updated version of one of Kant's central claims: we interpret the world by using our innate capacities and in particular our strong disposition to interpret events in terms of causes and effects. We project these notions onto the world, and have no choice but to do so, because of our own natures" (72). I ~~think~~believe that this contention is more Humean than Kantian. But, as Kant did, the author opposes a metaphysics which aims at knowing the basic constituents of the world in itself and at providing a unique description of the world as a whole. [Such metaphysical realism has been vigorously criticized by Putnam (1987: 19)]. Davies successfully argues against ontological global reductionism but acknowledges the merits of "methodological reductionism" which consists in contextually approaching particular things under a specific point of view and focussing on some of their aspects. This reductive approach, made possible by abstraction, is essential to the objective attitude, which ~~does~~nevertheless does not preclude embracing a moderate realist position according to which parts of our best scientific theories are true of some unobservable portions of the world. Davies

believes in the existence of atoms, for example, and adheres to moderate realism, but does not offer a philosophical argumentation in favor. It is clear that Davies strongly opposes reifying mathematics and mathematical parts of scientific theories, a move which leads to unjustified world-view beliefs.

The third chapter "The Nature of Mathematics" is the most valuable part of the book, as expected from a first-rate mathematician such as Brian Davies. It contains many stimulating reflections on the various ways in which mathematicians understand their trade. Davies contrasts the dominant "classical" view, imbibed with Platonism, with alternatives such as formalism, intuitionism and constructivism. He highlights the merits of Errett Bishop's constructivism in which all constructive proofs are also classical proofs. As an alternative to Platonism, Davies defends a pluralistic view, inspired from a" biologically and culturally based description of mathematics" (101). Such a view, it seems to me, can also be called "naturalist". Davies says: "Mathematics is an aspect of human culture, just as language, law, music and architecture. Its vocabulary is highly specialized, and its domain of applicability excludes much of what we care about in our everyday lives" (101). Mathematical Platonism is characterized thus : "theorems are supposed to be true statements about timeless entities, and to be true whether or not they have ever been or will ever be formulated by human beings, and whether or not they have proofs. Platonists believe that the infinite set of natural numbers actually exists and has objective properties" (97). In my opinion, such a definition of Platonism does not contradict the description of mathematics given by the author unless one adds that mathematics is a *mere* aspect of human culture, a contention that a Platonist, as well as Davies, deny.

A large part of the third chapter is devoted to the critique of mathematical Platonism. Some mathematicians, such as Roger Penrose, appeal to intuition and to a direct vision of mathematical entities. Quite correctly, Davies points out that such intuitions are unreliable and that what counts in mathematics are proofs. Yet, resort to direct intuition is not mentioned in the above definition of mathematical Platonism. Davies also remarks that Platonism is irrelevant to mathematical practice. This is correct, but mathematical Platonism is a *philosophical*

position ~~and~~that stands or fails irrespective of its good or bad influence on mathematical practice. Genuinely~~,~~ philosophical arguments are wanted here. Davies examines with a critical eye various versions of the indispensability argument of mathematics in physics, such as Quine's, and pays special attention to Eugene Wigner's argument from the astonishing effectiveness of mathematics. In line with his naturalist position, Davies offers the following alternative explanation of the success of mathematics in natural sciences: "The astonishing things are the physical regularity and our ability to recognize it, not the [mathematical] language that we use to express it. Given the first two, we were bound to start developing the third eventually" (134).

The naturalist explanation offered by Davies surely is plausible. Our mathematics is the outcome of the evolution of our brains in the course of Darwinian evolution which could not have taken place without (real) regularities in nature. The widespread agreement among mathematicians depends on the universal structure of our brain and the constraints it imposes on acceptable proofs. This is a contingent fact, which~~, I take it,~~ however is not per se incompatible with Platonism. ~~However~~Yet, Davies does not claim to have proved Platonism to be false, but only to have shown that a plausible alternative, a pluralistic and naturalistic view of mathematics, has more merits (100).

The fourth chapter "Sense and Nonsense" accurately presents the standard model of elementary particle physics, its application in cosmology and some interpretations of these results. Davies appropriately counsels to avoid wild speculations which have no basis in observation. For example, the fact that the standard model does not explain the values of the fundamental constants in nature provides no justification for postulating the existence of an infinity of universes or "multiverses" in which all possible combinations of the values of these constants would be actualized. Such speculations have been fostered by the desire to avoid positing the existence of God who has purposely created our unique "fine-tuned" and extremely improbable universe in such a way that we humans will eventually come to existence. Davies cogently argues that no observation warrants the belief in the existence of multiverses and also that the existence of our special universe does not provide evidence for the existence of God. He is right on both

counts. Incidentally, I do not see why we could a priori reject the possibility that God might have created an infinity of multiverses. After all, Leibniz has argued that an infinite material universe is more in accordance with his unlimited almightiness than a finite one.

In the last chapter "Science and religion," Brian Davies does not pretend "to prove or disprove the tenets of some or all religions by scientific analysis. One can simply try to understand why people have the beliefs that they do and examine their internal consistency and relevance to the ethical problems that scientific advances are posing" (187). Since the author truly claims that what people write about religious beliefs is heavily influenced by their own background, he consistently reveals that his father had abandoned his Baptist faith and that he was raised up in a non-religious atmosphere.

The author adopts a position which he calls "humanism." "Humanists (…) have two characteristic beliefs. The first is that they do not accept statements or values based solely upon authority, but seek evidence before coming to judgements. In particular, they support the scientific enterprise. The second (…) is that humanists endeavor to improve themselves morally and to have compassion for all other people, not because of an expectation of reward in some future life, but for their own sake." (187).

Davies acknowledges that religion is a much harder "concept" that science and that it is impossible to give a "definition" of religion. This is correct, because, as he stresses, "religion is much more than a matter of commitment to a particular set of theological propositions" (191). Indeed, to practice a religion is above all to try to live in a certain way.

After reviewing the various and incompatible beliefs entertained by scientists such as Galileo, Newton, Faraday, Gould, Dyson, Dawkins, Polkinghorne, Atkins and Coulson, the author correctly concludes that religious (or anti-religious) beliefs cannot be read off from science. Davies then ~~reviews~~presents and criticizes several arguments *pro et contra* the existence of God offered by Swinburne, Dawkins and Ward and rightly shows them to be unconvincing. Having done this, Davies concentrates on some claims of Christianism, namely virgin birth,[1]

resurrection, demonic possession, naturally occurring evil, life after death and argues that they lack factual basis or are unclear or both. In passing, we are instructed (in case we did not know yet) that religious people have several times killed each other in the course of history, while Davies remains silent on the massive crimes of Hitler's Nazis and Stalin's and Mao Tse-Tung's communists (but we also all know that). ~~From all this,~~ Davies advocates an agnostic position with respect to the existence of God and contends that humanism is the best position to adopt since it offers the best warrant for tolerance and respect of all.

Unfortunately, no belief, no matter how positive and sincere, have prevented the persons sharing them from performing evil actions. This is sadly applies to all of us, religious and non-religious, including humanists. Atheism and agnostic humanism also are world-view beliefs which as such are on a par with religious beliefs. Of course, incompatible beliefs cannot all be true. The agnostic and the religious cannot ~~escape~~escape from logic. Entertaining some belief implies believing that contrary beliefs are unsupported by evidence or false.

Besides, it is highly doubtful that even the most knowledgeable scientist comes to believe in any established scientific theory on the basis of "evidence". Urging that the relevant evidence is accessible to some other scientists is an argument of authority. Such an attitude is obviously not irrational, but it does not harmonize well with the first humanist belief formulated above. Granted, it is hard to single out the kind of evidence which would qualify as justifying a religious belief. In Christianism (on which Davies focuses), evidence comes from personal loving encounter with God through Scripture and other believers, which is akin to the experience of falling in love. Surely, trust and faith in another person in a loving relationship do not originate in acquaintance with some sort of scientific, observational or instrumental, evidence; and Davies agrees on this.

Davies' main target is fundamentalism, especially creationism and intelligent design. Although Davies does not clearly distinguish, as he should, the *fact* of evolution from the scientific *explanation* of this fact, he is correct to warn against the dangers of a literal reading of the bible and the anti-science attitude it fosters. The Catholic Church now

follows Augustine who, back in the fifth century, advised to revise an interpretation of the bible if it conflicts with well-established scientific facts and theories. The bible, however, remains the ground of Christian faith. It is then surprising that Davies never cites the bible but limits himself to (admittedly very interesting) quotations of Rowan Williams and Keith Ward.

Arguably, Christianism has played a major historical role in recognizing the highest value of compassion, love and respect of all. Its origin can be traced in Paul's epistle to the Galatians: "There is neither Jew nor Greek, there is neither bond nor free, there is neither male nor female. For you are all one in Christ Jesus" (3, 28). However, the interpretation of "respect of all" is perhaps not as clear as Davies thinks. Since most humanists are in favor of access to abortion (Davies is) and euthanasia, "respect of all" in some cases does not imply for them the inclusion ~~of~~of unborn babies ~~to be born~~ among human beings and the respect of everybody's life. To say the least, these are controversial issues and the views on human beings and the respect they deserve might not be so much clearer as some, also controversial, theological statements. The same kind of interpretation problems ~~apply~~applies to the expression "improving oneself morally."

Although I am (at least trying to be) a Catholic philosopher, I am not a theologian and I will thus refrain from discussing some central, yet admittedly hard to understand, Christian dogmas, which must be construed as grounding an authentically loving relationship with God and all other humans. Let me just observe that the "good thief" crucified with Jesus was not saved because of his good deeds, but because he recognized that Jesus was God (Luke 23, 39–43). True, there are religious people who perhaps perform good actions only for the sake of reward after death. However, this is not in accordance with the words of Jesus who said that good actions will be rewarded ~~if~~only if they are done "for my name's sake" (Matthew 19, 29). At any rate, God's love and mercy hold for all, good and bad, believers or not, without exception.

As I said at the very beginning of this review, the scientific attitude is objective. On the contrary, the religious attitude is "holistic" (Ghins

2009), in the sense that it considers the whole person, and does not attempt to methodologically reduce her or him to a set of measurable characteristics. For the Christian tradition, God is not a "concept" to be "defined" but a *person* with whom we can have a personal relationship, how difficult this might be. Loving God and one's neighbor cannot be separated (Matthew 22, 37–39). Persons are not objects, let alone scientific objects. Approaching and knowing persons require an attitude which is in many ways incompatible with the scientific objective attitude. This is why understanding the religious attitude necessitates distancing from the objective way of looking at things, a sort of conversion which seems to be difficult to achieve for westerners, especially when they are scientifically minded. If we want to tackle the thorny question of the relationship between science and religion, we should concentrate on religious and scientific *practices* and the distinct attitudes they exemplify, rather than on issues relating to the scientific contents of theories allegedly contradicting religious beliefs. Every word in the Gospel is a call to conversion, that is, to the radical change of attitude required to engage in genuinely loving relationships. This is why the main disagreements between science and religion—for example, on experiments dealing with human embryos—verge on the way of treating our fellow humans and of practically organizing society, including at the legislative level.

I fully agree with Brian Davies' pluralist stance when he says that we have limited mental capacities and that we need a multiplicity of ways of looking at things to understand them as well as we can. I submit that the religious attitude is one of these ways, and a very stimulating and gratifying one at that.

References

Cohen, I.B., and R.S. Westfall eds. 1995. *Newton, texts, background, commentaries*. New York: Norton.

Ghins, M. « Realism » , in *Interdisciplinary Encyclopaedia of Religion and Science* (http://www.inters.orgm, 2009).

Herivel, J. 1965. *The background to Newton's principia*. Oxford: Oxford University Press.

Putnam, H. 1987. *The many faces of realism*. LaSalle, Ill: The Open Court.

van Fraassen, B. 2002. *The empirical stance*. New Haven: Yale University Press.

[1] Virginal conception (which seems better wording than "virgin birth") is logically consistent with the theological claim that Jesus is the son of the Father and, contrary to what Davies says (229), does *not* imply that sexual intercourse is in itself a sin, according to the Catholic Church. Virginal conception must be carefully kept distinct from immaculate conception, which means that Mary is free of original sin.